

2012 National Air Quality Conference



Summer Ozone Study in Clark County Nevada

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Clark County Air Quality



CLARK COUNTY • DEPARTMENT OF AIR QUALITY

Objective

- ▶ Better characterize ozone (O_3) behavior in Southern Nevada
 - Summer O_3
 - Exceedances and non-attainment designations



Objective – Continued

Model validation

- ▶ High O_3
- ▶ Upper air reservoir
 - Influence on ground level O_3



Monitoring Logistics

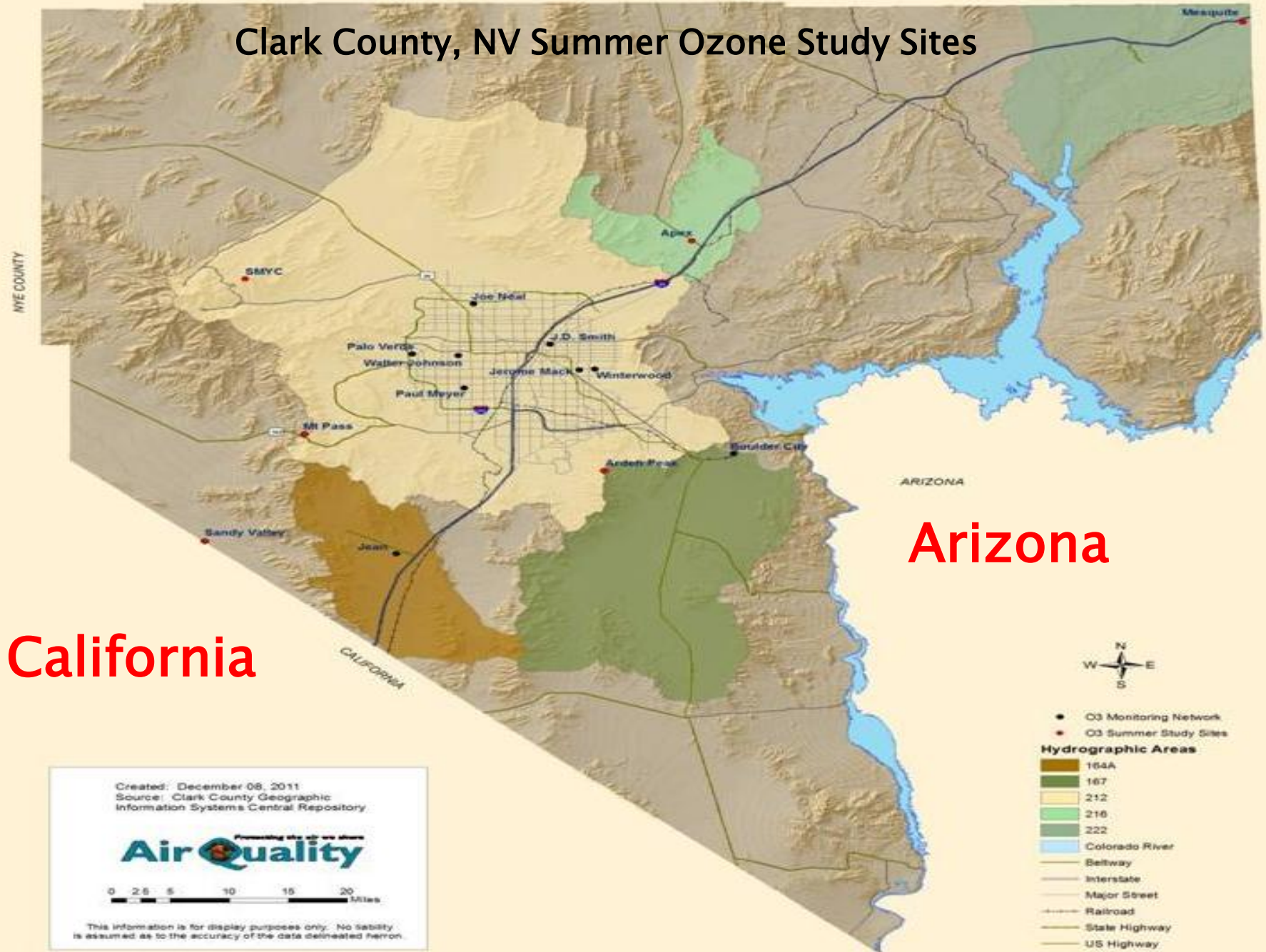
- ▶ Identify potential sites
- ▶ Strategic placement / siting of monitors
- ▶ Working with stakeholders
 - Air Quality Planning
 - IT personnel
 - Sites
 - Communications technology
 - Agreements



Clark County, NV Summer Ozone Study Sites

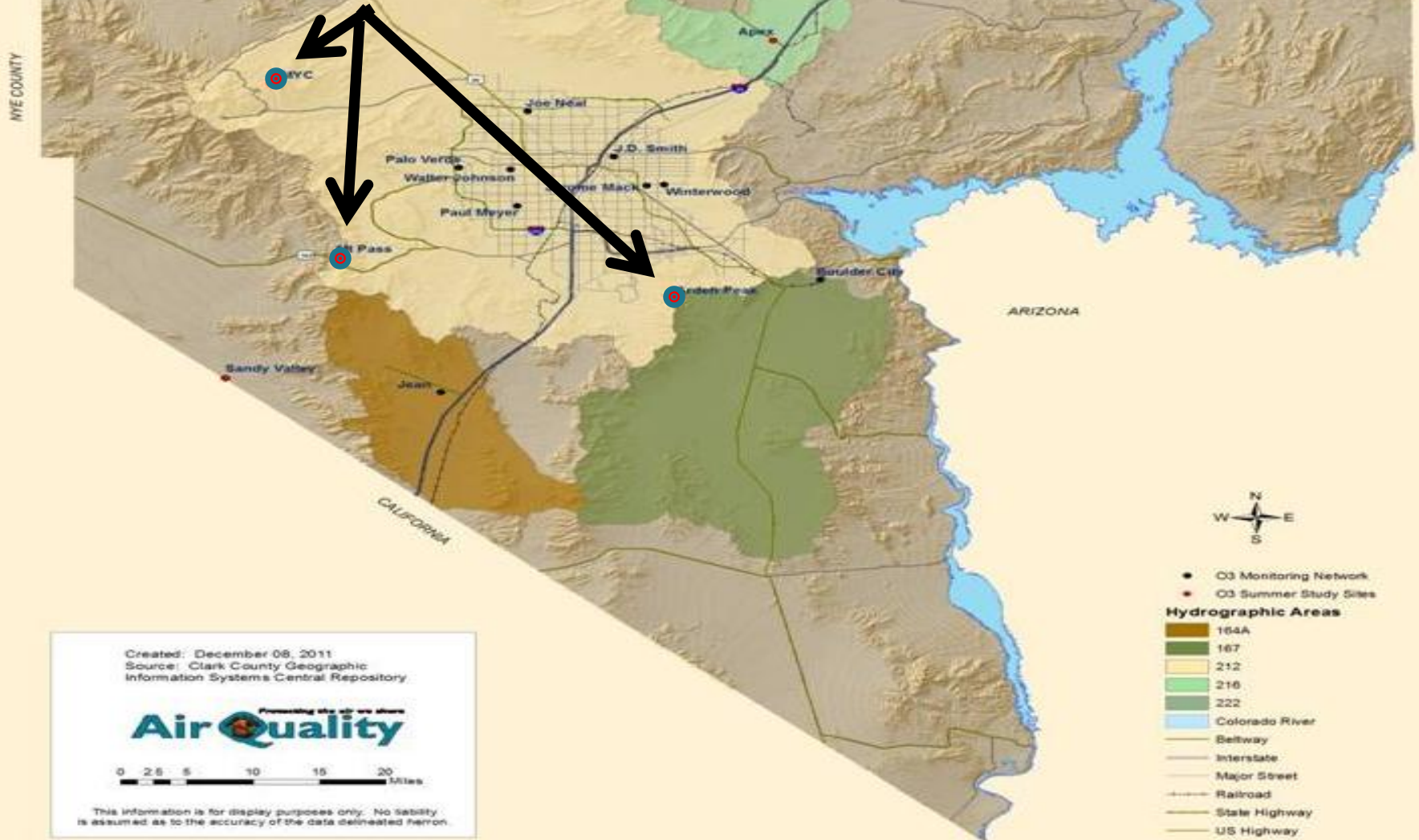
California

Arizona



Clark County, NV Summer Ozone Study Sites

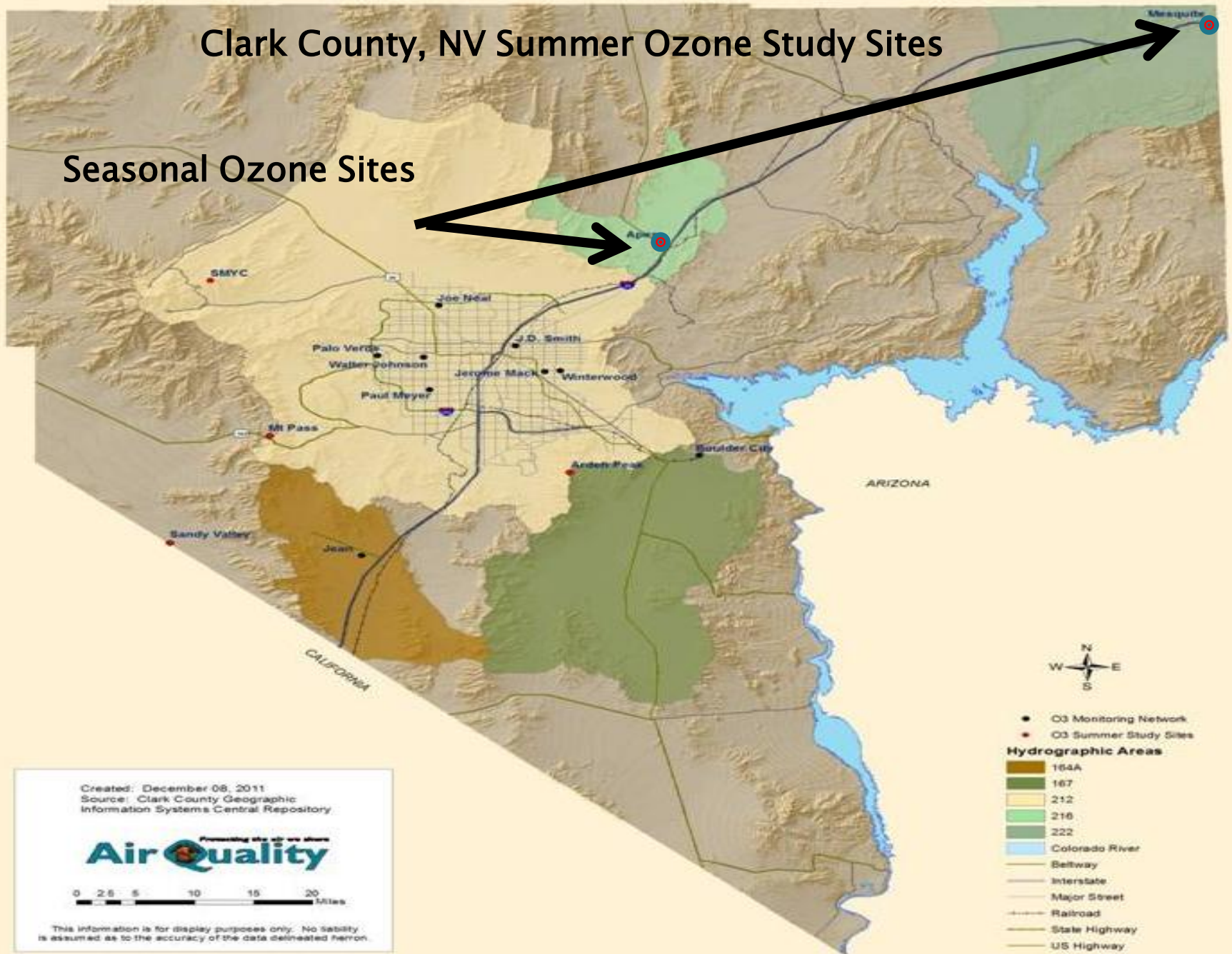
High Elevation Sites



Clark County, NV Summer Ozone Study Sites

Seasonal Ozone Sites

Nye County



Created: December 06, 2011
 Source: Clark County Geographic
 Information Systems Central Repository

Air Quality
 Promoting the air we share

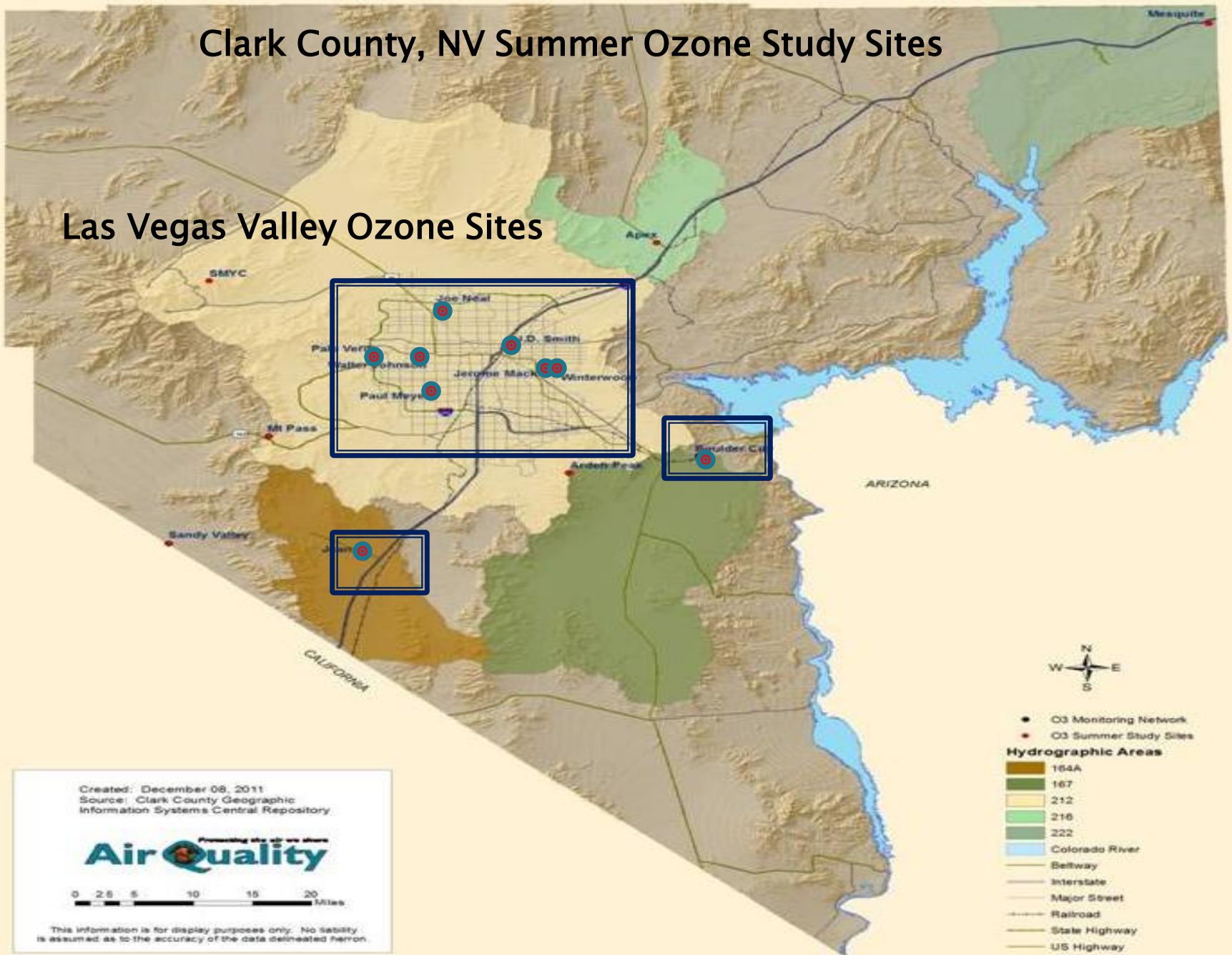
0 2.5 5 10 15 20 Miles

This information is for display purposes only. No liability is assumed as to the accuracy of the data delineated hereon.

Clark County, NV Summer Ozone Study Sites

Las Vegas Valley Ozone Sites

NVE COUNTY



Spring Mountain Youth Camp

8400 Ft.



Mountain Pass

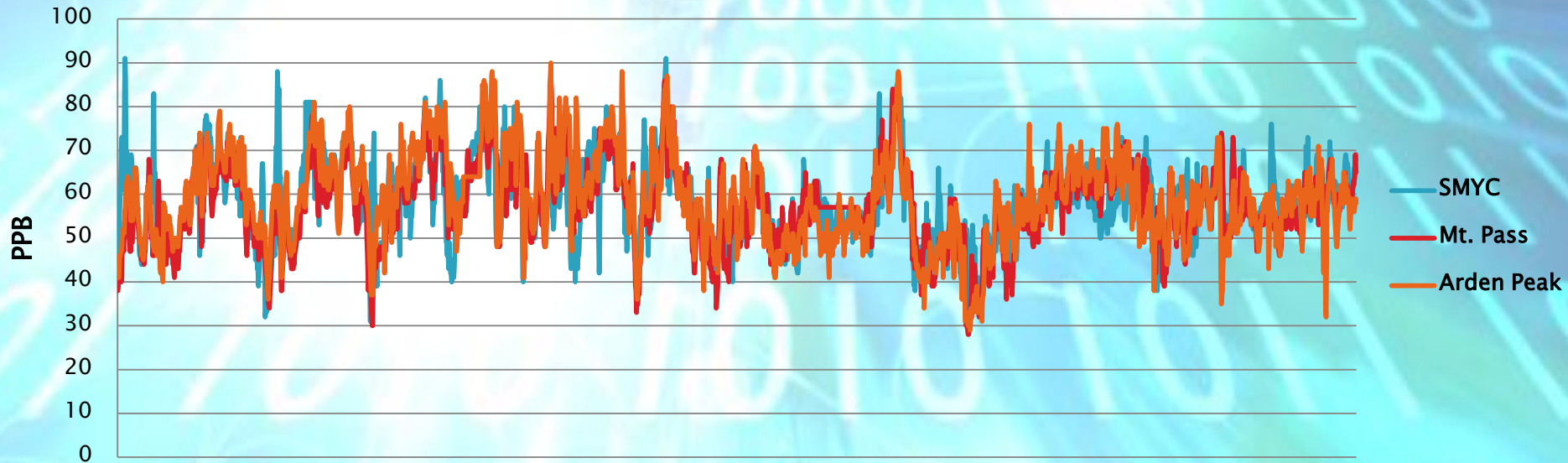
5700 Ft.



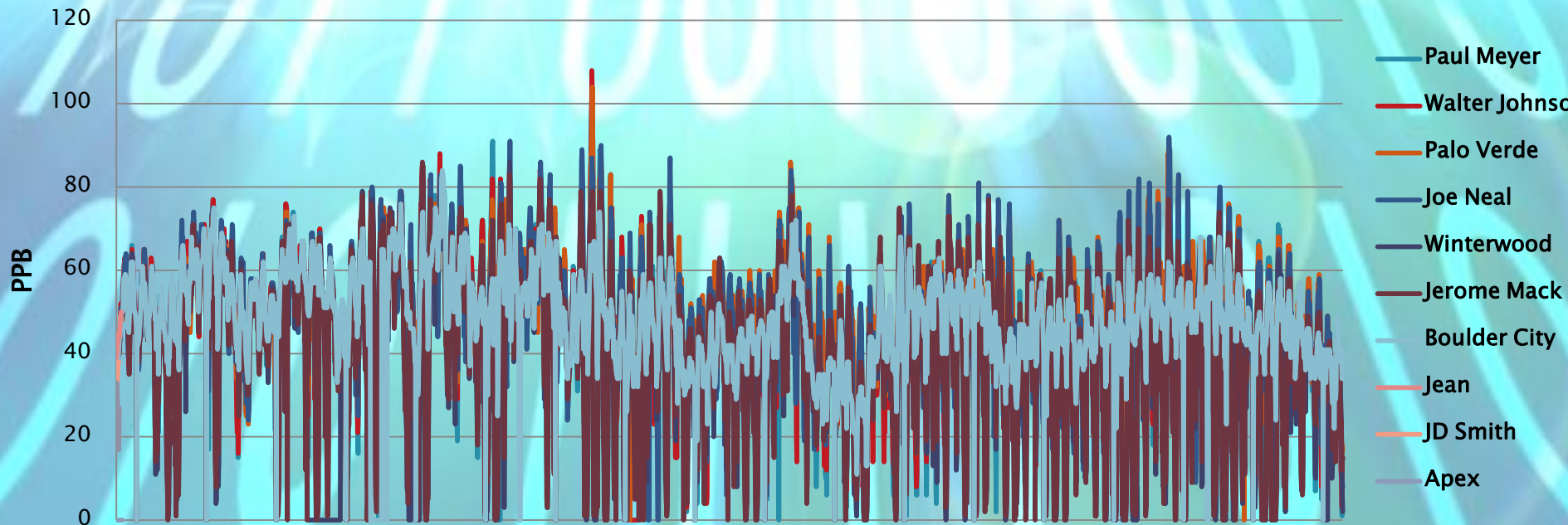
Arden Peak 4300 Ft.



High Elevation O₃ Sites (May through Aug.)



Low Elevation O₃ Monitoring Network (May through Aug.)

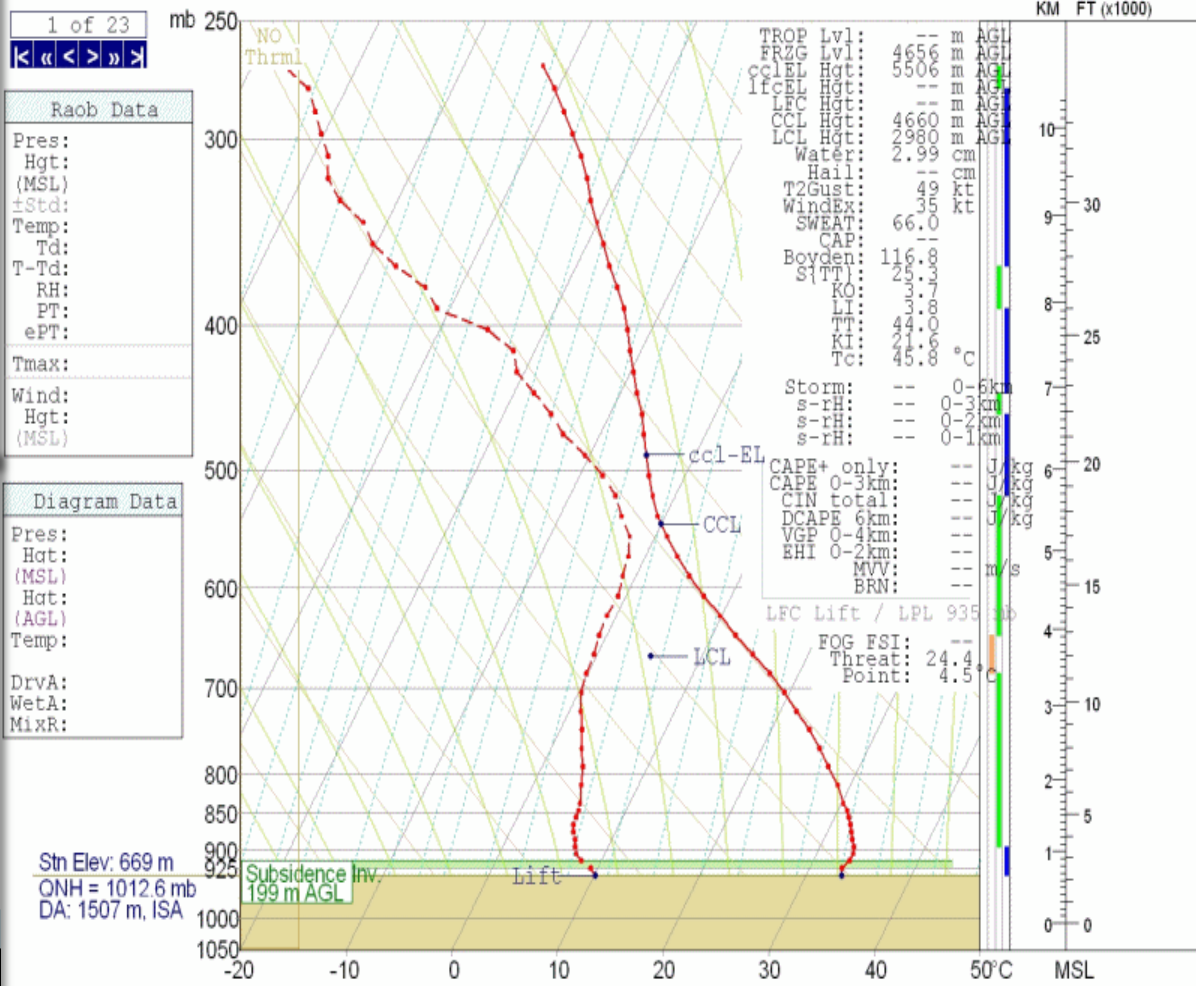
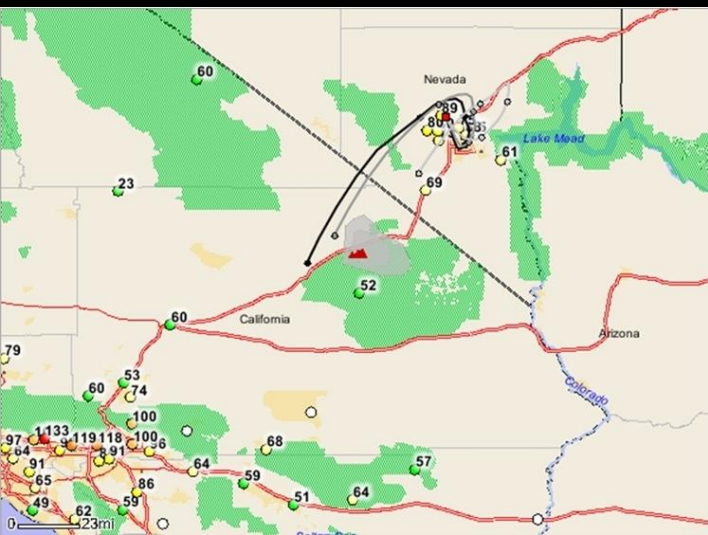
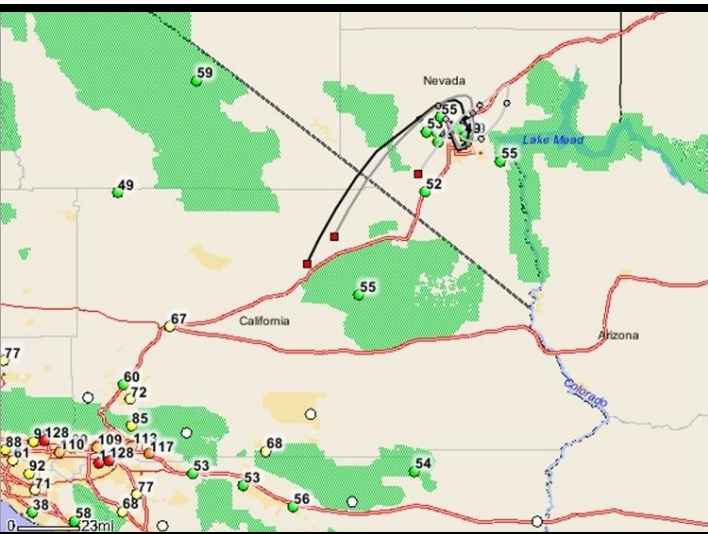


Unique Events and Upper Air Behavior

Aug. 28, 2011

Hysplit: Showing Smoke Impacts on O₃

Skew-T: Showing Inversion Break and Thermal Mixing (height and time)



Previous Year's O₃ Studies

2009 and 2010 – Smoke / Wildfire Study

- ▶ O₃ Precursor impacts
- ▶ Levoglucosan
- ▶ The “But For” argument
- ▶ Transport



Previous Year's O₃ Studies – Continued

2005 CCROPS and 2007 SLOTS

Worked with T&B Systems

- ▶ Upper air met and ozone
- ▶ Surface measurements
- ▶ Air flows and transport
- ▶ Ground ozone impacts



Study Conclusions

- ▶ High correlation between modeling and O₃ monitoring data
- ▶ Meteorological patterns during 2011 were not consistent with previous years' studies
- ▶ Elevated ozone concentrations occur more often in June and July, before the monsoonal season
- ▶ Local emissions of ozone precursors can be a factor in high ozone concentrations

CONCLUSION

Special Thanks To:

- ▶ Air Quality Monitoring Team
 - Meteorologist – Phil Wiker (Project Co-Manager)
 - Field Team – Kris Simonian, Matt Nelson, Joe Biebrich, and Dave Dickens
 - Sr. Techs – Phil and Mick Turner
 - Data Staff

- ▶ Air Quality Planning
 - Will Cates
 - (Project Co-Manager)

- ▶ Clark County IT
 - Rick Hasse
 - Andy Gagliardo



Any Questions?

